• Please see the course webpage for the answer key.

Find the Interval and Radius of Convergence for the folllowing Power Series. Analyze carefully and with full justification.

1. $\displaystyle\sum_{n=0}^{\infty} \frac{(-1)^n \ (6x+1)^n}{(6n+1) \ 7^n}$

2. $\displaystyle\sum_{n=0}^{\infty} \frac{(-1)^n \ x^{2n+1}}{(2n+1)!}$

3. $\displaystyle\sum_{n=0}^{\infty} n!(x-9)^n$

4. $\displaystyle\sum_{n=0}^{\infty} \frac{(-1)^n \ (7x-3)^n}{(n+1) \ 5^n}$

5. $\displaystyle\sum_{n=0}^{\infty} n^n(3x+5)^n$

6. $\displaystyle\sum_{n=0}^{\infty} \frac{x^n}{n!}$

7. $\displaystyle\sum_{n=0}^{\infty} \frac{(-1)^n \ (x+5)^n}{(n+3)^8 \ 4^n}$